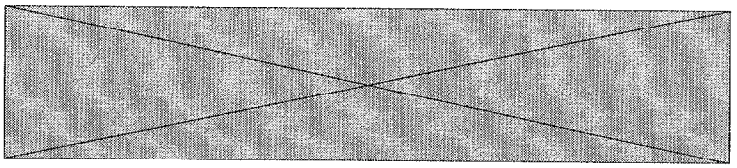

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107-4431

Office of Superfund
Robert Thomson, P.E.
Mail Code 3HW50

Direct Dial (215) 566-3357
FAX (215) 566-3001

Date:

Mr. Richard N. Stryker
Atlantic Division, Naval Facilities Engineering Command
Environmental Quality Division
Code: 1822
Building N 26, Room 54
1510 Gilbert Street
Norfolk, Va 23511-2699

Re: Naval Weapons Station, Yorktown, Va.
Sites 9 & 19
Review of the Navy's draft final *FS*

Dear Mr. Stryker:

The U.S. Environmental Protection Agency (EPA) has reviewed the Navy's draft final *Feasibility Study* for Sites 9 and 19, located at the Naval Weapons Station Yorktown (WPNSTA). The following comments are made on behalf of the BTAG.

The FS evaluated six remedial alternatives as follows:

1. No Action. Cost: $0.00,

2. No Action with Institutional Controls. This remedial action alternative (RAA) combines the institutional controls of fencing, deed restrictions, and monitoring, with the No Action Alternative. Fencing measuring 600 linear feet will be installed around the perimeter of Site 19 and will span the area between the existing fence at the site. Deed restrictions would be implemented by holding legal procedures that limit the future residential or commercial use of the site. Ground water and soil sampling semiannually, and soil will be sampled annually. Samples would be analyzed for explosives. Cost: $280,000,

3. Capping - This RAA includes a soil cap over site areas of concern (SAOCs) 1, 2, and 3 in Site 19 along with a monitoring program that will periodically sample all media for explosives. The cap would be composed of a 30 cm clay layer, 15 cm of top soil, and native vegetation. Cost: $620,000,

4. Excavation/Biological Treatment/Reuse-Recycle - RAA 4 will include excavating soils from the three SAOCs, field testing to verify that all contaminated soil has been removed, transfer of the contaminated soil to a biological treatment unit, backfilling the excavated areas with treated soil, and revegetating all disturbed areas. Four methods of biological treatment are presently being evaluated: a) aqueous phase bioreactor, b) solid phase biocell reactor, c) slurry oxidation, and d) white rot fungus. Treated soils would be tested to confirm that remediation levels are met and will be stockpiled on site for use as backfill. Cost: $610,000,

5. Excavation/Soil Washing/Incineration/Reuse-Recycle - RAA 5 would include excavating soil from the three SAOCs; field testing to verify that all contaminated soil has been removed; transfer of the contaminated soil to an on-site soil washing operation; incineration of the consolidated waste; backfilling the excavated areas with clean, treated soil; and revegetating all disturbed areas. Cost: $1,027,000, and

6. Excavation/Incineration - RAA 6 would include excavating soil from the three SAOCs; field test to verify that contaminated soil has been removed, load contaminated soil trucks; dispose of contaminated soils at the nearest incineration facility permitted to incinerate explosives-contaminated waste; incineration; backfilling the excavation areas with clean soil and revegetate. Cost: $1,542,000.

The draft PRAP reported that RAA 4 was preferred for the clean-up of Site 19.

Comments

1. There were no substantial differences between the draft and the draft final FS; the same six remedial alternatives were evaluated in both drafts. The subject PRAP also recommended the same remedial alternative as the previous draft, RAA 4. However, the description of RAA 4 in the subject PRAP was different than in the previous draft. The previous PRAP proposed to excavate approximately 1,290 cubic meters of soil and implement a monitoring program while the subject PRAP proposed to excavate 516 cubic meters of soil with no monitoring. This is less than half the volume of soil proposed for removal in the previous PRAP. The cost was also approximately 40 percent lower. In addition, the subject PRAP reported that contaminated soils would be removed from two site areas while the FS reported that soils would be removed from three site areas. The apparent reason for the reduction in the amount of soils to be removed is not clear. In fact, the "Final Remediation Goals" presented in the subject FS (15 mg/kg TNT; 5 mg/kg RDX; Table 3-13) are lower than the "Final Remediation Levels" presented in the previous draft (30 mg/kg TNT; 100 mg/kg RDX; Table 3-7).

2. The excavation and treatment of contaminated soils would likely be an effective option to isolate sources of contamination from the pathways to Felgates Creek. However, the discrepancies between the previous and subject draft PRAPs need to be justified before BTAG would agree that the latest RAA 4 would be equally protective of ecological receptors, including NOAA trust resources. The groundwater and surface water monitoring program should be re-instituted into RAA 4. Contamination would not completely eliminated in treated soils and after treatment, backfilling would occur in the original source areas with no isolation from pathways to Felgates Creek. Monitoring would be necessary to determine if remediation was successful. The monitoring may be able to be connected with the Lee Pond investigation, since both sites 9 and 19 drain to

Lee Pond before Felgates Creek.

3. The subject FS reported that field testing to verify that contaminated soils have been removed would be conducted during excavation activities. The field kits to test for explosives have not been reliable in past sampling efforts. Split samples should be analyzed by an approved laboratory.

4. The document should clearly indicate if treatability studies are proposed, are underway, or have been completed to determine which bioremediation method would be used.

5. All of the decisions that have been made during the Partnering meetings between NWS Yorktown and EPA/BTAG should be outlined. In particular, the additional sampling for aluminum contamination adjacent to the building next to the conveyor belt is not mentioned in the draft final FS or in the PRAP and this may influence the volume (675 cubic yards) of soil to be remediated and the cost of the selected remedy RAA 4. The partnering also agreed that a statement about the concentrations of Pb that would drive an ecological risk at site 19 will be addressed by the remediation planned for this site would be included in the ROD. A similar statement should also be included in the FS/PRAP.

6. Page 2-4, section 2.2.3: The NOAA ER-L is not a criteria, but a guideline. this change should be made in this section and elsewhere in this document.

7. Page 2-13, section 2.5.1.4: The statement "Inorganics, including arsenic (6.7J to 55.5 mg/kg)," is not a sentence.

8. Page 3-5, section 3.1.2.1: Support for chromium being naturally high (e.g. within site-wide background concentrations) should be given in this section.

9. Table 3-13: Do the shaded values indicate the FRGs selected for 9 and 19? This should be clearly indicated on this table (see text on page 3-15).

10. In attachment B.1, some of the maximum values are less than the mean values. This should be explained.

Appendix B

11. Page 9, section 2.6: The hypothesis formulation section does not account for reptiles, listed in assessment endpoint number 4. This omission should be corrected or explained.
12. Page 10, section 2.7: The measurement endpoints section also does not address reptiles. This omission should be explained.

13. Page 13, section 2.8: In the third line of this section, the phrase "...flora fauna community" should be "flora and fauna community."

14. Page 15, section 3.0: The third bullet says, "A biota to soil/water/sediment accumulation factor (BSAF) of 1 was assumed for the vegetation, invertebrates, fish, and small mammals." Some justification of the value should be given in this section. If this BSAF is the same as the biological concentration factor (BCF), then there will be some

- underestimating of the potential biological impacts of certain contaminants that have BCFs greater than 1.

This concludes EPA's review of the Navy's draft final *Feasibility Study* for Sites 9 and 19, located at the WPNSTA. If you have any questions, please contact me at (215) 566-3357.

Sincerely,

Robert Thomson, PE
Superfund Federal Facilities (3HW50)

cc: Steve Milhalko (VADEQ, Richmond)
Jeff Harlow (WPNSTA, Code 09)
Barbara Okorn (USEPA, 3HW41)